

Windbreak Barrier

The trees accomplish important roles in the coffee agro system, such as the recycling of nutrients through organic matter production, hydrological services, micro-climate modification and income diversification. Trees planted around the crop form a protective barrier against the wind, a factor that due to more extreme climatic variability, may manifest itself as stronger and hotter/colder gusts. The selection of multi-use species can contribute to the system's resilience, e.g. legume trees (nitrogen fixers, organic matter contribution, bee-friendly), fruit trees (food security and income), and timber trees (firewood and income).



Steps



Planting trees around the crop

Barrier formation

Established barrier

Step by Step

- 1 The first step is to identify prevalent wind strength and direction that affects the area. For this, the local knowledge of the farmer will help, as well as to inform about where diseases like Phoma start to infest the field.
- 2 To define the tree or shrubby species to be used in the barrier to protect coffee production, selection can be made from legumes (Ingá, Acacia, Leucena and Tefrosia); fruit trees (Banana, Avocado, Macadamia), or timber trees (Cedar, Grevillea, Mahogany).
- 3 To mark the place where the trees seedlings will be placed, make 40cm³ pits and add organic matter and/or fertilizer to the hole before planting. The distance depends on the species but as the objective is to form barriers, it is recommended to have small distances, from three to six meters between each plant. More than one row can be planted if space permits. Large fields may need central barriers as well.
- 4 Shrubby species can be used between the trees in order to close the spacing and to create strata.

The c&c team have shown that the use of windbreak barriers reduce the wind intensity in coffee cultivation and reduces soil water evaporation, maintaining it moist for longer. A reduction in Phoma was seen, when comparing with neighbouring fields where there were no barriers.